

5 METHODS AND COMPOSITIONS FOR POLYNUCLEOTIDE ANALYSIS
USING GENERIC MOLECULAR BEACONS

ABSTRACT

10 Methods, compositions and articles of manufacture for assaying a sample for an
amplification product from a target polynucleotide are provided. An amplification reaction is used to
produce the amplification product from the target polynucleotide so that it can be used to indirectly
assay the sample for the target polynucleotide. A sample suspected of containing the target
polynucleotide is contacted with first and second primers to amplify the target polynucleotide; the first
primer comprises a tag sequence, the complement of which is formed on the opposite strand during
amplification and is referred to as a capture sequence. That opposite strand is referred to as a second
primer extension product or an amplification product. A probe polynucleotide is provided that is a
molecular beacon and can bind to the capture sequence to form an amplification product detection
complex. Methods of detecting the amplification product detection complex thus produced are also
20 provided, as are amplification product assay arrays, along with methods of forming the same. The
methods are particularly useful in multiplex settings where a plurality of target polynucleotides are to be
assayed. Kits comprising reagents for performing such methods are also provided.